

# EXHIBIT A

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
(Sprint Docket No. 1654)

In the Application of:	)	
	)	
Yarkosky et al.	)	
	)	Examiner: Bryan J. Fox
Serial No.: 09/886,633	)	
	)	Art Unit: 2617
Filed: June 21, 2001	)	
	)	Confirmation No.: 6146
For: Method And System For Overcoming	)	
Pilot Pollution In A Wireless	)	
Communications Network	)	

Mail Stop Amendment  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

**TRANSMITTAL LETTER**

Sir:

In regard to the above identified application:

1. We are transmitting herewith the attached:

- A. Response To The Office Action Mailed On September 22, 2006;
- B. Return Receipt Postcard.

2. With respect to additional fees, no additional fee is required.

3. Please charge any additional fees or credit overpayment to Deposit Account No. 210765. A duplicate copy of this sheet is enclosed.

4. CERTIFICATE OF MAILING UNDER 37 CFR § 1.8: The undersigned also hereby certifies that this Transmittal Letter and the paper, as described in paragraph 1 hereinabove, are being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Mail Stop Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450 on this 27<sup>th</sup> day of November, 2006.

By: Richard A. Machonkin  
Richard A. Machonkin  
Reg. No. 41,962

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P.O. Box 1450  
Alexandria, VA 22313-1450

**RESPONSE TO THE OFFICE ACTION MAILED ON SEPTEMBER 22, 2006**

Dear Sir:

In response to the Office Action mailed September 22, 2006, please enter the following amendments and consider the following remarks.

**Amendments to the Claims** are reflected in the listing of claims, which begins on page 2 of this paper.

**Remarks** begin on page 6 of this paper.

**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application.

**Listing of Claims:**

Claims 1-6: Canceled

7. (previously presented) A method for forcing a hand-off within a cellular wireless system on crossing a boundary from a first geographical area to a second geographical area, the method comprising:

receiving a preferred pilot signal in a directional receiving antenna from a selected base station antenna that provides wireless coverage in the second geographical area;

amplifying the preferred pilot signal to provide a boosted pilot signal; and

transmitting the boosted pilot signal within the second geographical area and substantially only along a boundary between the first and second geographical areas from a directional transmitting antenna.

8. (original) The method of Claim 7 further comprising:

aligning the directional receiving antenna with the selected base station in the cellular wireless network to selectively receive the preferred pilot signal, wherein the selected base station transmits the preferred pilot signal.

9. (original) The method of Claim 7 further comprising:

aligning the directional transmitting antenna to selectively transmit the boosted pilot signal within the second geographical area; and

adjusting the boosted pilot signal to have a signal strength within the first geographical area that is substantially less than an intended pilot signal for the first geographical area.

10. (original) The method of Claim 7 wherein the amplifying step comprises:

selectively amplifying the preferred pilot signal with a surface acoustic wave filter.

11. (previously presented) An apparatus for forcing a hand-off within a cellular wireless system on crossing a boundary from a first geographical area to a second geographical area comprising:

a directional receiving antenna for receiving a preferred pilot signal from a selected base station antenna that provides wireless coverage in the second geographical area;

a radio-frequency amplifier having an input and an output, wherein the input accepts the preferred pilot signal from the directional receiving antenna and the output provides a boosted pilot signal; and

a directional transmission antenna that accepts the boosted pilot signal from the output of the radio-frequency amplifier and transmits the boosted pilot signal within the second geographical area and substantially only along a boundary between the first and second geographical areas.

12. (original) The apparatus of Claim 11 wherein the directional receiving antenna is a Yagi antenna.

13. (original) The apparatus of Claim 11 wherein the directional transmitting antenna is a Yagi antenna.

14. (original) The apparatus of Claim 11 wherein the radio-frequency amplifier includes a surface amplitude wave filter to selectively amplify the preferred pilot signal.

15. (canceled)

16. (canceled)

17. (previously presented): A method for forcing a hand-off within a cellular wireless system on crossing a boundary from a first geographical area to a second geographical area, the method comprising:

aligning a directional receiving antenna with a selected base station antenna that provides wireless coverage in the second geographical area in the cellular wireless network to selectively receive a preferred pilot signal, wherein the selected base station transmits the preferred pilot signal;

receiving the preferred pilot signal in the directional receiving antenna from the selected base station;

selectively amplifying the preferred pilot signal with a surface acoustic wave filter to provide a boosted pilot signal;

aligning a directional transmitting antenna to selectively transmit the boosted pilot signal within the second geographical area; and

adjusting the boosted pilot signal to have a signal strength within the first geographical area that is substantially less than an intended pilot signal for the first geographical area; and

transmitting the boosted pilot signal within the second geographical area and substantially only along a boundary between the first and second geographical areas from the directional transmitting antenna.

18. (previously presented): An apparatus for forcing a hand-off within a cellular wireless system on crossing a boundary from a first geographical area to a second geographical area comprising:

a Yagi receiving antenna for receiving a preferred pilot signal from a selected base station antenna that provides wireless coverage in the second geographical area;

a radio-frequency amplifier having an input and an output, wherein the input accepts the preferred pilot signal from the Yagi receiving antenna and the output provides a boosted pilot signal, and wherein the radio-frequency amplifier includes a surface amplitude wave filter to selectively amplifier the preferred pilot signal; and

a Yagi transmission antenna that accepts the boosted pilot signal from the output of the radio-frequency amplifier and transmits the boosted pilot signal within the second geographical area and substantially only along a boundary between the first and second geographical areas.

Claims 19-22: Canceled

## REMARKS

### 1. Introduction

In the Office Action mailed September 22, 2006, the Examiner rejected claims 2, 7, 8, 11, 19, and 20 under 35 U.S.C. § 102(a) as being anticipated by Kim et al., WO 01/31804 A1 (“Lee”).

The Examiner rejected claims 3, 6, 10, 14, and 21 under 35 U.S.C. § 103(a) as being unpatentable over Kim in view of Sabat, Jr. et al., U.S. Pub. No. 2002/0016170 (“Sabat”).

The Examiner rejected claims 5, 12, and 13 under 35 U.S.C. § 103(a) as being unpatentable over Kim in view of Trompower et al., U.S. Patent No. 6,128,512 (“Trompower”).

The Examiner rejected claim 9 under 35 U.S.C. § 103(a) as being unpatentable over Kim in view of Judson, U.S. Patent No. 7,054,662 (“Judson”).

The Examiner rejected claim 17 under 35 U.S.C. § 103(a) as being unpatentable over Kim in view of Judson, and further in view of Sabat.

The Examiner rejected claims 18 and 22 under 35 U.S.C. § 103(a) as being unpatentable over Kim in view of Trompower, and further in view of Sabat.

In this Response, Applicants have canceled claims 2, 3, 5, 6, and 19-22. Claims 1, 4, 15, and 16 were canceled previously. Thus, claims 7-14, 17, and 18 are currently pending.

For the reasons set forth below, Applicants request reconsideration and allowance of the claims as amended herein.



## 2. Response to Claim Rejections

### a. Claims 7-10

Of these claims, claim 7 is independent. The Examiner has rejected claim 7 under § 102(a) as being anticipated by Kim. In response, Applicants submit that the Examiner's rejection is improper and should be withdrawn because Kim fails to disclose each and every element of claim 7, as set forth below.

Claim 7 recites, *inter alia*, “transmitting the boosted pilot signal within the second geographical area and ***substantially only along a boundary between the first and second geographical areas*** from a directional antenna.” The Examiner has alleged that Kim discloses this element, specifically citing to page 4, lines 7-13 and Figure 3. However, what Kim actually discloses is a repeater that transmits a boosted signal within an area that is ***not*** substantially only along a boundary between first and second geographical coverage areas. In particular, Figure 3 of Kim shows a pilot pollution area 350 that includes ***multiple*** boundaries, specifically: (i) the overlap of areas 310 and 320, (ii) the overlap of areas 320 and 330, (iii) the overlap of areas 330 and 340, (iv) the overlap of areas 340 and 310, and (v) the overlap of areas 340 and 320.

According to Kim, relaying apparatus 380 is installed in the pilot pollution area 350 to improve the signal-to-noise ratio for a specified base station. *See* page 4, lines 7-13. Moreover, Kim explains that the apparatus “monitors the occurrence of the soft blocking in a downtown area or in a place where there exists a plurality of densely located base stations and signals transmitted therefrom.” *See* page 4, lines 14-16. Thus, Kim's repeater functions to improve the signal-to-noise ratio throughout pilot pollution area 350, not just along a particular boundary. In contrast, claim 7 specifies transmitting “substantially only along a boundary” between geographical areas.

In addition, claim 7 recites transmitting the boosted pilot signal from a *directional* transmitting antenna. Kim, however, does not describe transmitting antenna 280 as being *directional*. To the contrary, Kim's approach of having relaying apparatus 380 cover all of pilot pollution area 350 actually teaches away from using a directional transmitting antenna.

Accordingly, Applicants submit that claim 7 is allowable over Kim for at least the foregoing reasons. Applicants further submit that claims 8-10 are allowable for at least the reasons that the claims are dependent on an allowable claim.

**b. Claims 11-14**

Of these claims, claim 11 is independent. The Examiner has rejected claim 11 under § 102(a) as being anticipated by Kim. In response, Applicants submit that the Examiner's rejection is improper and should be withdrawn because Kim fails to disclose each and every element of claim 11, as set forth below.

Claim 11 recites, *inter alia*, "a *directional* transmission antenna that accepts the boosted pilot signal from the output of the radio-frequency amplifier and transmits the boosted pilot signal within the second geographical area and *substantially only along a boundary between the first and second geographical areas*." As noted above for claim 7, Kim's repeater does not transmit "substantially only along a boundary" between geographical areas, nor does Kim disclose a directional transmission antenna. Thus, Kim does not disclose all of the elements recited in claim 11.

Accordingly, Applicants submit that claim 11 is allowable over Kim for at least the foregoing reasons. Applicants further submit that claims 12-14 are allowable for at least the reason that the claims are dependent on an allowable claim.

c. **Claim 17**

The Examiner has rejected claim 17 under § 103(a) as being unpatentable over Kim in view of Judson, and further in view of Sabat. In response, Applicants submit that the Examiner's rejection is improper and should be withdrawn because the Kim/Judson/Sabat combination fails to disclose each and every element of claim 17, as set forth below.

Claim 17 recites, *inter alia*, "transmitting the boosted pilot signal within the second geographical area and ***substantially only along a boundary between the first and second geographical areas*** from the ***directional*** transmitting antenna." The Examiner has cited to Kim as allegedly disclosing this element. However, as noted above for claim 7, Kim's repeater does not transmit "substantially only along a boundary" between geographical areas, nor does Kim disclose transmitting from a directional antenna. Applicants submit that Judson and Sabat do not make up for these deficiencies in Kim. For this reason alone, the Kim/Judson/Sabat combination fails to teach all of the elements recited in claim 17.

In addition, claim 17 recites "adjusting the boosted pilot signal to have a signal strength within the first geographical area that is substantially less than an intended pilot signal for the first geographical area." The Examiner has acknowledged that Kim does not disclose this element. *See* Office Action, p. 10. Instead, the Examiner has appeared to rely on Judson, specifically citing to col. 5, lines 17-32. However, that section of Judson describes an antenna beam pattern that is narrowed "to focus the signal transmission energy in the direction of the user 108, rather than spreading the signal transmission energy across the entire width of sector 104." The section does not describe adjusting the boosted pilot signal to have a signal strength that is substantially less than an intended pilot signal. In fact, by teaching that the signal transmission energy should be ***focused*** in the direction of the user, Judson actually teaches away from a

boosted pilot signal that has a signal strength that is substantially *less* than an intended pilot signal. For this reason also, the Kim/Judson/Sabat combination fails to teach all of the elements recited in claim 17.

Accordingly, Applicants submit that claim 17 is allowable over Kim, Judson, and Sabat for at least the foregoing reasons.

**d. Claim 18**

The Examiner has rejected claim 18 under § 103(a) as being unpatentable over Kim in view of Trompower, and further in view of Sabat. In response, Applicants submit that the Examiner's rejection is improper and should be withdrawn because the Kim/Trompower/Sabat combination fails to disclose each and every element of claim 18, as set forth below.

Claim 18 recites, *inter alia*, an antenna that “transmits the boosted pilot signal within the second geographical area and *substantially only along a boundary between the first and second geographical areas.*” The Examiner has cited to Kim as allegedly disclosing this element. However, as noted above, Kim's repeater does not transmit “substantially only along a boundary” between geographical areas. Applicants further submit that Trompower and Sabat do not make up for this deficiency in Kim.

Accordingly, Applicants submit that claim 18 is allowable over Kim, Trompower, and Sabat for at least the foregoing reasons.

**3. Conclusion**

Applicants submit that the present application is in condition for allowance, and notice to that effect is hereby requested. Should the Examiner feel that further dialog would advance the

subject application to issuance, the Examiner is invited to telephone the undersigned at any time at (312) 913-0001.

Respectfully submitted,

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HULBERT & BERGHOFF LLP**

Dated: November 27, 2006

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